

REMARKS

This Amendment is submitted in response to the Final Office Action dated November 30, 2009. Claims 11, 12, 14-18 and 20-23 are pending in the application. The Office Action: objected to the drawings, objected to Claim 20, and rejected Claims 11, 12, 14-18 and 20-23 under 35 U.S.C. §103. Claim 23 is amended herein. Applicants respectfully submit that the rejections are improper or have been overcome, for at least the reasons that are set forth in detail below. The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

With respect to Claim 20, the Patent Office again asserts that the phrase “the blue light emitting layer” lacks antecedent basis. (See, Office Action, page 3, lines 5-7). However, Applicant respectfully maintains that the first appearance of the term “blue light emitting layer” in independent Claim 20 is preceded by the term “a.” For example, Claim 20 recites, in part, “a plurality of light emitting layers including a red light emitting layer, a green light emitting layer, and a blue light emitting layer.” As such, Applicant respectfully submits that the second occurrence of the phrase “the blue light emitting layer” in Claim 20 has proper antecedent basis.

Accordingly, Applicant respectfully requests that the objections to Claims 16 and 20 be withdrawn.

The Office Action objected to the drawings for not depicting an anode / blue / green / red / cathode arrangement as recited in Claim 23. Applicant has amended Claim 23 to recite, at least in part, a plurality of light emitting layers including a red light emitting layer, a green light emitting layer, and a blue light emitting layer laminated in respective order between an anode and a cathode, to be consistent with the ordering of the layers in the other claims.

Accordingly, Applicant respectfully submits that the objection to the drawings has been overcome.

The Office Action rejected Claims 11, 12, 14-18 and 20-23 under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 2001/0031509 to Yamazaki et al. (“Yamazaki”) in view of U.S. Patent No. 6,285,039 to Kobori et al. (“Kobori”). Applicant respectfully submits that, even if combinable, the cited references fail to disclose or suggest each and every element of independent Claims 11, 18 and 20.

Independent Claims 11 and 18 recite, in part, an organic EL device comprising: a plurality of light emitting layers including a red light emitting layer, a green light emitting layer,

and a blue light emitting layer laminated in respective order between an anode and a cathode, wherein the green light emitting layer comprises a hole transporting material and an electron transporting material. Similarly, currently amended independent Claim 20 recites, in part, an organic EL device comprising: an anode; a hole transport layer formed on the anode; a plurality of light emitting layers including a red light emitting layer, a green light emitting layer, and a blue light emitting layer laminated in respective order on the hole transport layer such that the red light emitting layer is formed in contact with the hole transport layer; an electron transport layer formed on the blue light emitting layer; a cathode formed on the electron transport layer; and an intermediate layer, wherein the green light emitting layer comprises a hole transporting material and an electron transporting material.

By providing an organic EL device with the claimed configuration, the present claims provide a better balance of luminous intensities in the blue, green and red wavelength regions. (See, Specification, page 1, paragraphs 4-7; page 2, paragraphs 12 and 14). In contrast, the cited references fail to disclose or suggest every element of the presently pending claims.

The newly cited Yamazaki primary reference is relied upon for allegedly disclosing a plurality of light emitting layers including a red light emitting layer, a green light emitting layer, and a blue light emitting layer laminated in respective order between an anode and a cathode. In particular, the Office Action alleges that: "Yamazaki discloses an organic EL device comprising: a plurality of light emitting layers (309a-c) including a red light emitting layer (309a), a green light emitting layer (309b), and a blue light emitting layer (309c) laminated in respective order between an anode (303) and a cathode (306)." (See, Office Action, citing to Yamazaki, Figs. 4, 5A, 5B and paras. [0040] and [0073]). In fact, paragraph [0040] of Yamazaki only discloses: "in the case of emitting color lights, three kinds of emission layers for the colors R (red), G (green), and B (blue) may be formed in line in each of the pixels, or an emission layer luminescing white color in combination with a color filter may be provided." There is no teaching or suggestion regarding any ordering of different colored emission layers, much less the specific ordering as presently claimed.

It appears that the Patent Office is further relying on paragraph [0073] of Yamazaki for an alleged disclosure or suggestion that three color layers should be ordered in the particular order from anode to cathode, as presently claimed. In particular, the Office Action alleges that Yamazaki discloses: "the three colors can be arranged in any order as long as the band structure

is maintained.” (See, Office Action, pg. 3). Yamazaki does not disclose or suggest this. In particular, Yamazaki describes several materials such as Alq₃ (tris-6-quinolilite-aluminum complex), DPVBi (distylallylene conductor), BeBq₂ (bisbenzoquinolilite berylliumis complex), TPD (triphenylamine conductor), α -NPD, PPV (polyparaphenylene vinylene), and PVK (polyvinyl carbazole) that may be used as the emission layer. (See, Yamazaki, [0071]). In addition, Yamazaki, discloses that: “[t]he band structure of the present invention may be formed by appropriately combining the above-mentioned emission layer and fluorescent substance.” (See, Yamazaki, [0073]). There is nothing in either of these paragraphs and related figures of Yamazaki that would suggest to one of skill in the art that there should be three different colored emission layers and that they should specifically be a red light emitting layer, a green light emitting layer, and a blue light emitting layer laminated in respective order between an anode and a cathode. As mentioned above, an organic EL device with the presently claimed configuration provides a better balance of luminous intensities in the blue, green and red wavelength regions. (See, Specification, page 1, paragraphs 4-7; page 2, paragraphs 12 and 14). Yamazaki does not recognize that a particular ordering of layers would achieve the benefits of the presently claimed invention. There is simply no discussion of the significance of the specific ordering of layers in the entire Yamazaki reference.

Furthermore, previously amended independent Claims 11, 18 and 20 require two materials, rather than merely two properties, in the green light emitting layer. Nowhere does Kobori disclose or suggest combining two materials to obtain a green light emitting layer with both strong electron and hole transporting properties. The Patent Office cites support for such claimed element in column 19, lines 38-65 and column 33, line 37 of Kobori. These sections of Kobori appear to disclose one light emitting layer (that may be a red, green or blue light emitting layer) that has “functions of injecting holes and electrons, transporting them, and recombining holes and electrons.” (See, Kobori, col. 19, lines 60-62). However, there is no disclosure regarding the number of different materials that are to be used to achieve these functionalities. Therefore, Kobori fails to disclose or suggest a green light emitting layer that comprises a hole transporting material and an electron transporting material as required, in part, by the present claims.

Thus, Applicant respectfully submits that the combination of Yamazaki and Kobori fails to disclose a plurality of light emitting layers including a red light emitting layer, a green light

emitting layer, and a blue light emitting layer laminated in respective order between an anode and a cathode as required, in part, by independent Claims 11, 18, 20, 23 and dependents therefrom. Moreover, the cited references fail to disclose a green light emitting layer that comprises a hole transporting material and an electron transporting material in accordance with the present claims.


Accordingly, Applicant respectfully requests that the rejection of Claims 11-12, 14-18 and 20-23 under 35 U.S.C. §103(a) over Yamazaki and Kobori be withdrawn.

For the foregoing reasons, Applicant respectfully submits that the present application is in condition for allowance and earnestly solicits reconsideration of same.

Respectfully submitted,

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